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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/688,384	10/17/2003	Quanyuan Shang	4432D1/DISPLAY/AKT/BG	2231
44257	7590	12/13/2005	EXAMINER	
PATTERSON & SHERIDAN, LLP 3040 POST OAK BOULEVARD, SUITE 1500 HOUSTON, TX 77056			MACARTHUR, SYLVIA	
			ART UNIT	PAPER NUMBER
			1763	
DATE MAILED: 12/13/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/688,384

Applicant(s)

SHANG ET AL.

Examiner

Sylvia R. MacArthur

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 26 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-3, 7-13 and 17-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 7-13 and 17-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1,2 7,8, and 21-24 are rejected under 35 U.S.C. 102(b) as being anticipated by Harashima et al (US 5,677,824).

Harashima et al teaches a method of lifting a substrate from chuck.

Regarding claims 1, 21, 23: Figs. 2A & 2B along with col. 3 lines 10-65 anticipate this claim. Namely, Harashima et al teaches projecting a first set of pins (release pins 1) a first distance above the surface of a substrate support, projecting a second set of lift pins 9 a second distance above the surface of the substrate support. The step of causing the substrate to form a bowed region is illustrated in Figs. 2B & 2C At the point when the lift pins 9 contact the substrate it occurs at a distance less than the first distance (lifting of the peripheral by the release pins 1) as the lift pins touch the center of the substrate, which is subsequently the bowed region.

Regarding claim 2: Lift pins 9 are located inward the release pins 1 see Fig. 2A.

Regarding claims 7, 8, and 24: This claim is anticipated by col. 3 lines 50-65.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 9-13, 17-19, 20, 25, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harashima et al in view of White et al (US Patent 5,352,294).

The teachings of Harashima et al were discussed above.

Harashima et al does not disclose a lift plate.

White et al disclose a pin support plate (Fig 3-122) for lifting the pins and a rim projecting from the central position (Fig 8-20).

The motivation to modify the apparatus of Harashima et al with that of White et al is that it provides a support plate for the two sets of lift pins. This support (lift) plate provides enhanced stability for the lift pins ensuring that they will fall through the stage when retracted/elevated.

There fore it would have been obvious to one having ordinary skill in the art at the time invention was made to replace two sets of lift mechanisms by one lift plate like that of White et al to make the lift mechanism more reliable.

5. Claims 3 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harashima et al.

The teachings of Harashima et al were discussed above. Harashima et al does not specifically teach that the projected distances are at least 2 mm apart.

Harashima et al does teach in col. 3 lines 23-36 that the distance of elevation depends on the size of the wafer.

It would have been well within one of ordinary skill in the art at the time of the claimed invention to ensure that the projected distances between the sets of pins is at least 2 mm

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to ensure that the wafer does not crack as taught by Harashima. The projected distance is a matter of optimization limited by the size of the wafer used.

***Response to Arguments***

6. Applicant's arguments, see page 6, filed 9/26/2005, with respect to the rejection(s) of claim(s) 1-3 under 102 (b) have been fully considered and are persuasive. Namely, that the prior art of Ushikawa (WO 97/20340) does not read upon dechucking a substrate or the steps of claim 1 of the present invention. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Harashima et al. Harashima et al teaches lifting or dechucking a substrate from a support and forming a bowed region by the first set of pins see Figs. 2B & 2C.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sylvia R. MacArthur whose telephone number is 571-272-1438. The examiner can normally be reached on M-F during the core hours of 9 a.m. and 3 p.m.

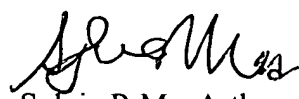
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Parviz Hassanzadeh can be reached on 571-272-1435. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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A handwritten signature in black ink, appearing to read 'Sylvia R MacArthur', written in a cursive style.

Sylvia R MacArthur

Patent Examiner

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December 2, 2005